

Application note 5038: Substitution of controllers in machines

Brief Description	<p>This application note shows, how to substitute a drive controller for example in case of service purposes.</p> <p>The following will be described:</p> <ul style="list-style-type: none">■ how to substitute, install and start a servoTEC S2xx or servoTEC S2xxxFS controller,■ how to modify wiring from X3 to X40 of an STO module,■ how to handle with project directory and operating system;
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We are always grateful for suggestions for improvements and information about errors.

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1 Changes

Modification history:

Document Code	Date	Modifications
APP5038_EN_1134945_SubstituteControllersInMachines_R1a.doc	April 2015	Release of this English document. Reference: German document "APP5038_DE_1134944_AustauschVonAntriebsreglernAnMaschinen_R1a.doc".

2 Machines with PA-CONTROL

2.1 servoTEC S2xxx

2.1.1 Default Parameter Set

The servoTEC S2xxx device is delivered with a "Default parameter set" by IEF-Werner.
Thus the device is ready for simple exchange.

2.1.2 Installing servoTEC S2xxx device

- Installing drive controller
- Adapting STO wiring if required

2.1.3 Switch on and start the machine

The PA-CONTROL automatically identifies the servoTEC S2xxx with its "Default parameter set" when it is switched on during initialization.
The PA-CONTROL transfers the stored drive parameters of the PA-CONTROL to the servoTEC S2xxx.
Afterwards the machine can be started as usual.

2.2 servoTEC S2xxxFS

2.2.1 Default Parameter Set

The servoTEC S2xxxFS device is delivered with a "Default parameter set" by IEF-Werner.
Thus the device is ready for simple exchange.

2.2.2 Install servoTEC S2xxxFS device

- Installing drive controller
- Adapting STO wiring if required

2.2.3 Switch on and start the machine

The PA-CONTROL automatically identifies the servoTEC S2xxxFS with its "Default parameter set" when it is switched on during initialization.
The PA-CONTROL transfers the stored drive parameters of the PA-CONTROL to the servoTEC S2xxxFS.
Afterwards the machine can be started as usual.

2.3 Substitution of a servoTEC S2xxx through a servoTEC S2xxxFS

By replacing servoTEC S2xxx through a servoTEC S2xxxFS on an existing machine, the following possibilities are available in relation to the PA-CONTROL and its software version:

2.3.1 PA-CONTROL Steuer, PA-CONTROL Smart, (V5.xx)

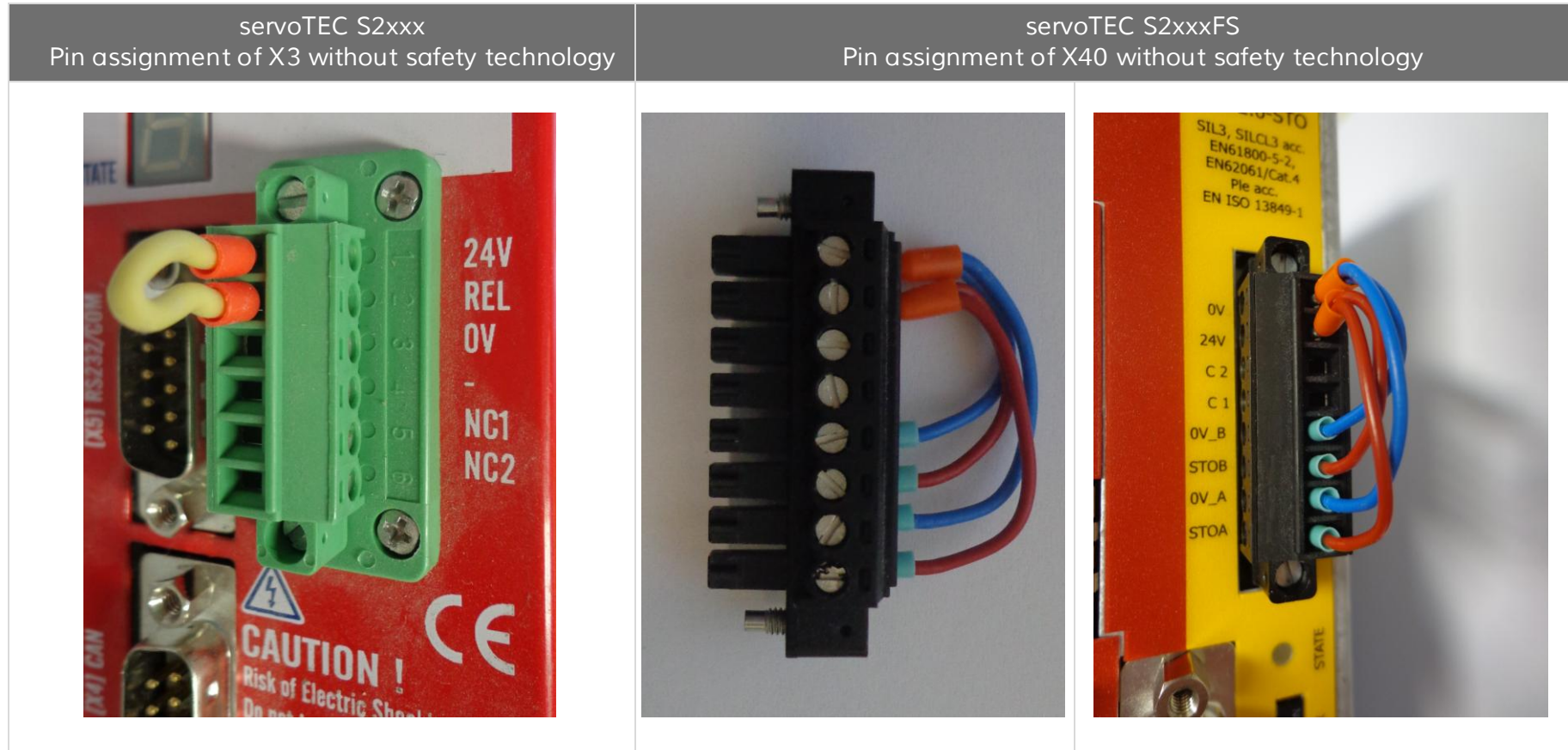
PA-CONTROL Steuer, PA-CONTROL Smart, (V5.xx)	
Software version	Action
< V 5.27	<p>The operating system of the PA-CONTROL doesn't recognize the drive controller of „servoTEC S2xxxFS“ . The operating system must be updated to version V5.27 or higher.</p> <ul style="list-style-type: none"> ■ Generate a backup with WINPAC. ■ Update the operating system to the required version with WINPAC, afterwards switch off the device. ■ Modify the wiring from X3 to X40 of the STO module (see section 2.3.3: Modify wiring from X3 to X40 of STO module, 8). ■ Connect new drive controller. ■ Switch on the machine with PA-CONTROL. Because of the new version of the operating system the PA-CONTROL runs a re-initialization. ■ Performing a download with WINPAC. Thereby the axis type will be switched to servoTEC S2xxxFS. ■ Load the current parameter set with WINPAC onto the PC (performing a backup).
>= V 5.27	<p>The operating system of the PA-CONTROL recognizes the drive controller of „servoTEC S2xxxFS“ .</p> <ul style="list-style-type: none"> ■ Switch off the device. ■ Modify the wiring from X3 to X40 of the STO module (see section 2.3.3: Modify wiring from X3 to X40 of STO module, 8). ■ Connect new drive controller. ■ Switch on the machine with PA-CONTROL. ■ When starting up the device the PA-CONTROL recognizes the new servoTEC S2xxx(FS), accepts the new servoTEC S2xxxFS as an axis and supplies the controller with the driver parameters of servoTEC S2xxx.

2.3.2 PA-CONTROL Touch (V6.xx)

PA-CONTROL Touch (V6.xx)	
Software version	Action
< V 6.12	<p>The operating system of the PA-CONTROL doesn't recognize the drive controller of „servoTEC S2xxxFS“ . The operating system must be updated to version V5.27 or higher</p> <ul style="list-style-type: none"> ■ Generate a backup with WINPAC. ■ Update the operating system to the required version with WINPAC, afterwards switch off the device. ■ Modify the wiring from X3 to X40 of the STO module (see section 2.3.3: Modify wiring from X3 to X40 of STO module, 8). ■ Connect new drive controller. ■ Switch on the machine with PA-CONTROL. Because of the new version of the operating system the PA-CONTROL runs a re-initialization. ■ Performing a download with WINPAC. Thereby the axis type will be switched to servoTEC S2xxxFS. ■ Load the current parameter set with WINPAC onto the PC (performing a backup).
>= V 6.12	<p>The operating system of the PA-CONTROL recognizes the drive controller of „servoTEC S2xxxFS“ .</p> <ul style="list-style-type: none"> ■ Switch off the device. ■ Modify the wiring from X3 to X40 of the STO module (see section 2.3.3: Modify wiring from X3 to X40 of STO module, 8). ■ Connect new drive controller. ■ Switch on the machine with PA-CONTROL. ■ When starting up the device the PA-CONTROL recognizes the new servoTEC S2xxx(FS), accepts the new servoTEC S2xxxFS as an axis and supplies the controller with the driver parameters of servoTEC S2xxx.

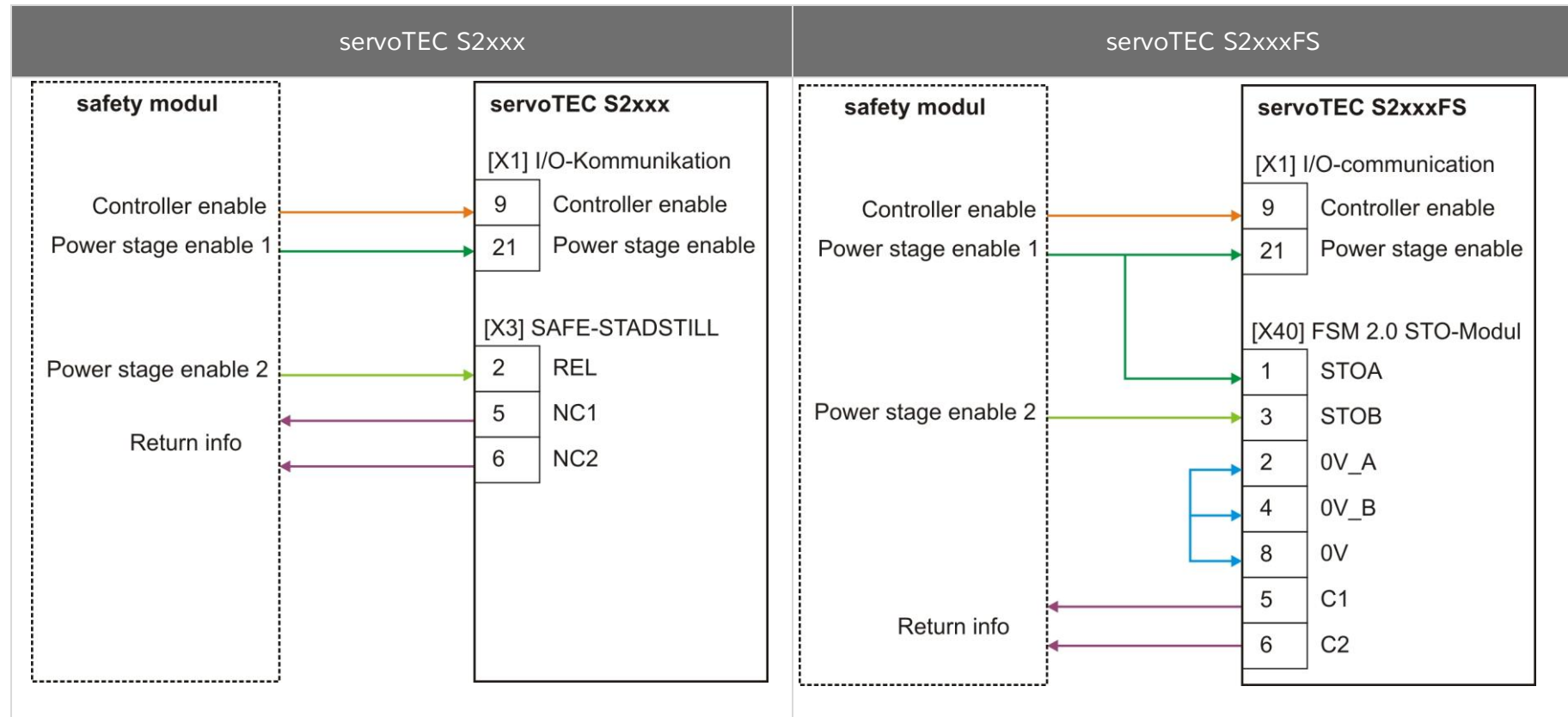
2.3.3 Modify wiring from X3 to X40 of STO module

2.3.3.1 The STO function is not used



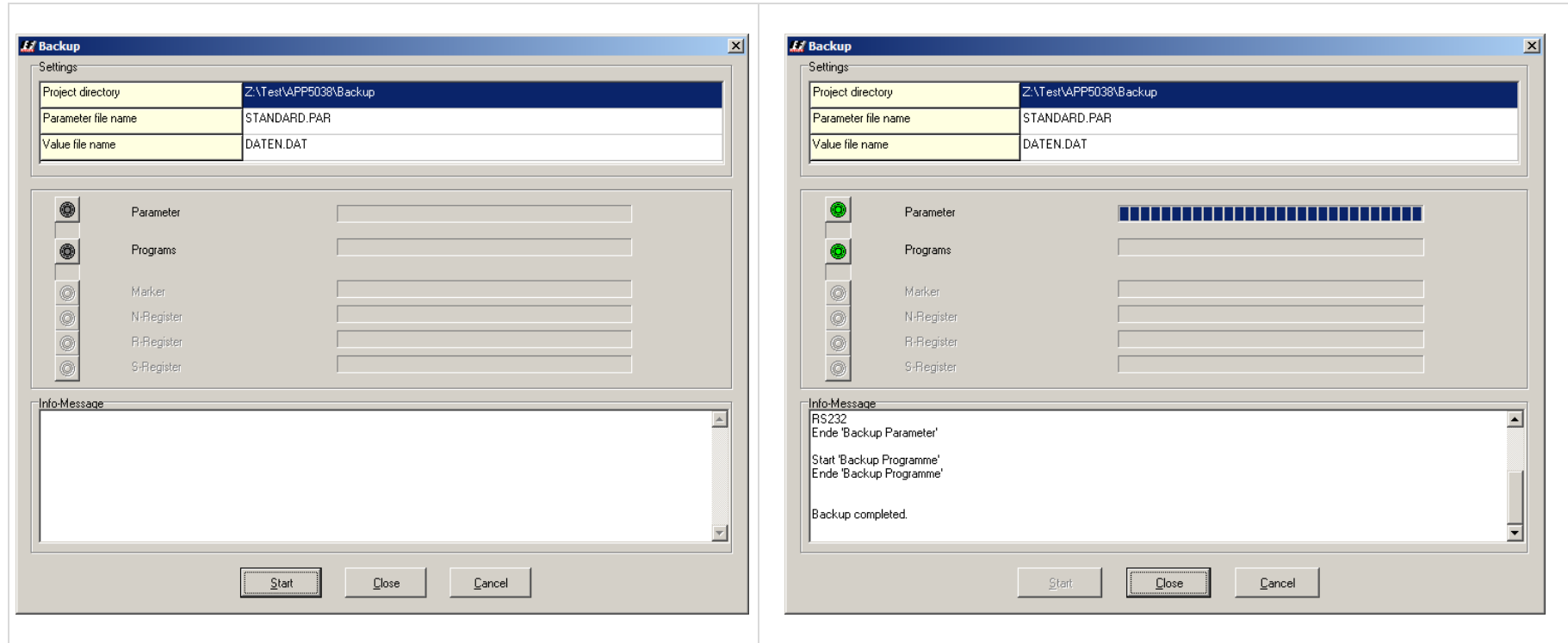
2.3.3.2 The STO function is used

If STO function is used, the wiring has to be adjusted to the servoTEC S2xxxFS.



2.3.4 Procedure when updating of the operating system is necessary

2.3.4.1 Performing a backup with WINPAC



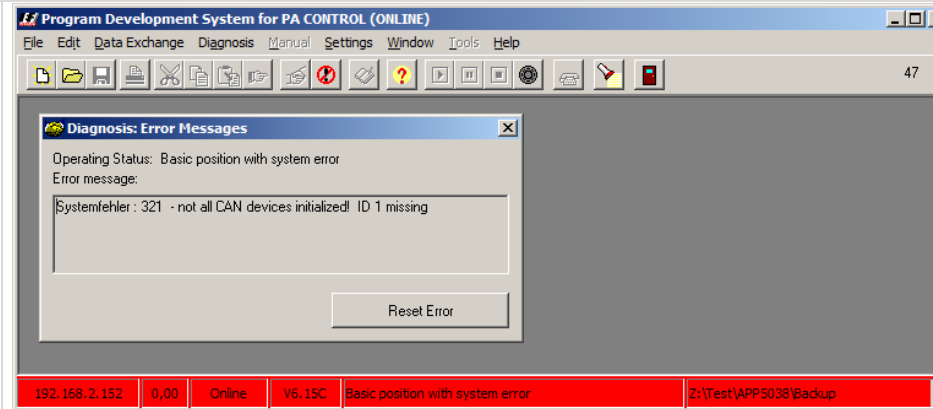
2.3.4.2 Install servoTEC S2xxxFS device

- Install drive controller
- Adapting STO wiring if required

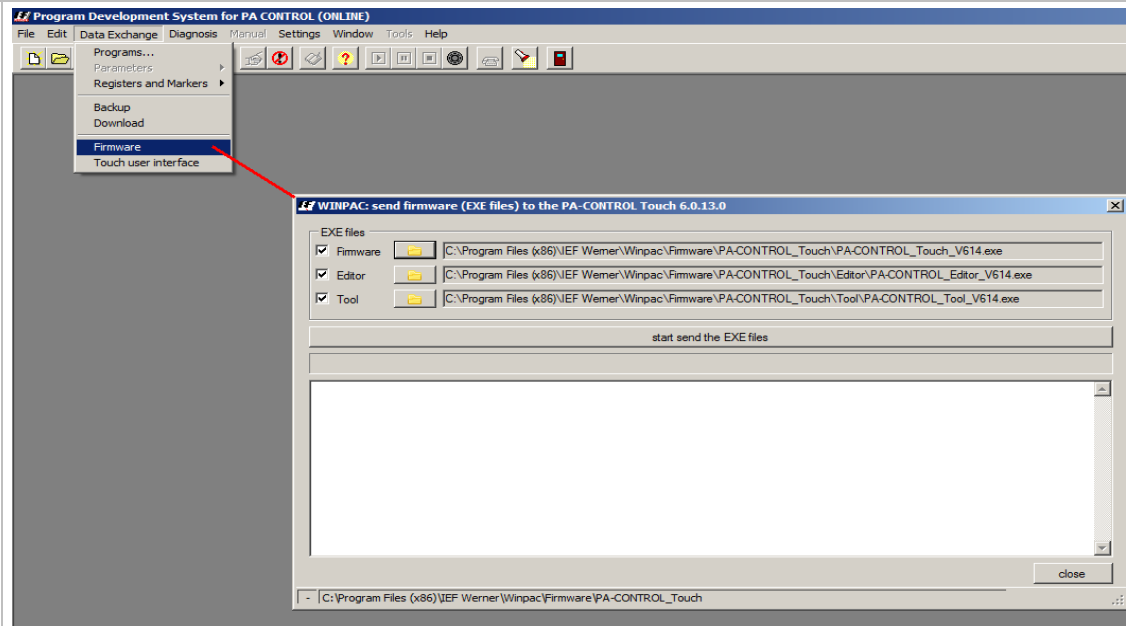
2.3.4.3 Install a new operating system

If the machine is switched on again after modification (PA-CONTROL, drives,...), the PA-CONTROL reports an error:

- E126
- E321
- E...

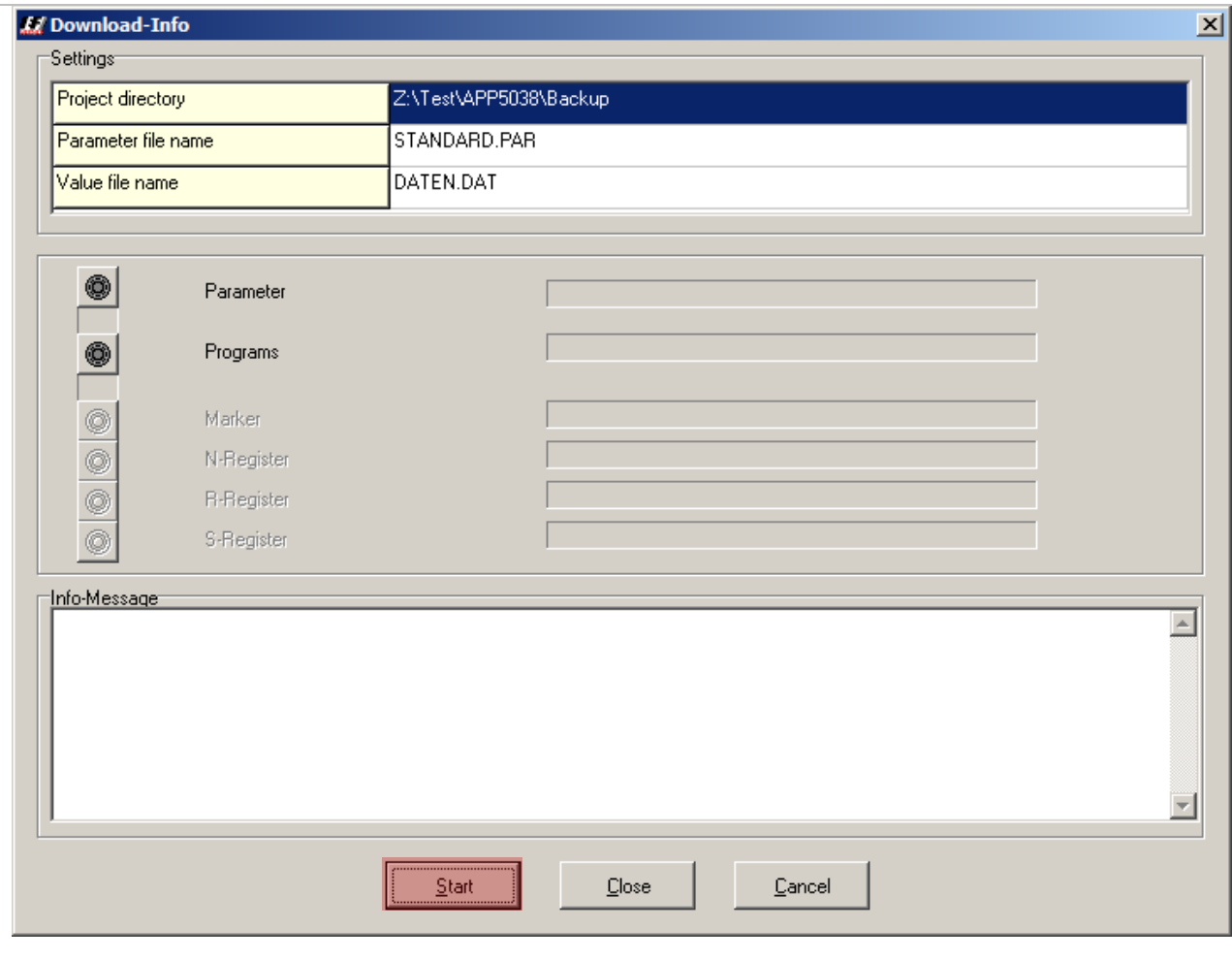


Ignore the error message and install the new operating system.



2.3.4.4 Download the old parameters and programs

Start the download by pressing the "Start" button.



Control the information and acknowledge by pressing the "OK" button.

IEF **Hardware configuration** ✕

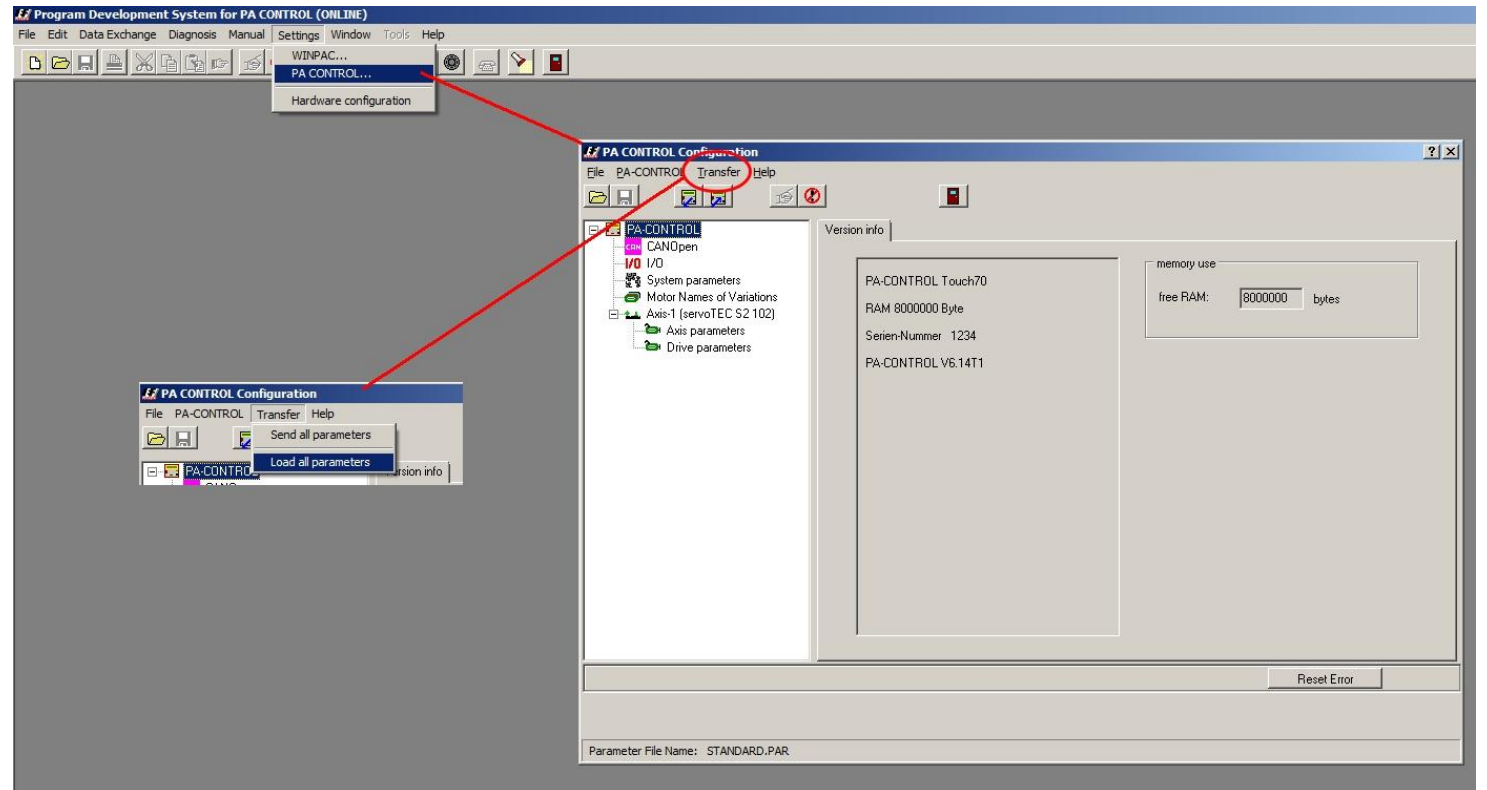
Hardware configuration from PA-CONTROL and the parameter file is different.

	Parameter File	PA-CONTROL	State	Note
CPU-Type	CPU-Touch	CPU-Touch	OK	
M-Module	free	free	OK	
1. IEF-Module	free	free	OK	
2. IEF-Module	free	free	OK	
Number of axis	1	1	OK	
Number of ASI-Masters	0	0	OK	
Number of COM-Interfaces	0	0	OK	
Number of Abs.-Pos.-Systems	0	0	OK	
type of axis A1	servoTEC S2 102	servoTEC S2 102 FS	different	change type of axis, parameters are transfered

change the type of the axis and make the download

2.3.4.5 Refresh project directory

- Select the button "PA-CONTROL" in the settings menu.
- The PA-CONTROL Configuration menu opens.
- Select the button "Transfer" in this menu
 - Select the button "Load all parameters" and acknowledge with "OK".



2.3.5 Procedure when updating of the operating system is not necessary

2.3.5.1 Install servoTEC S2xxxFS device

- Install drive controller
- Adapting STO wiring if required

2.3.5.2 Turn on the machine and start it

The PA-CONTROL automatically identifies the servoTEC S2xxx with its "Default parameter set" when it is switched on during initialization. The PA-CONTROL transfers the stored drive parameters of the PA-CONTROL to the servoTEC S2xxxFS and save them in the servoTEC S2xxxFS.